

WHAT IS CLAIMED IS:

1. An adhesion structure for a motor for adhering a rotor or a stator having a first linear expansion coefficient and a magnet having a second linear expansion coefficient, which differs from the first linear expansion coefficient, to one another, the adhesion structure comprising:

an adhesive agent for forming an adhesive agent layer;

10 and

a thickness determining means extending in an axial direction of the rotor and arranged on either one of the magnet and the rotor or the stator, the thickness determining means determining the thickness of the adhesive agent layer formed from the adhesive agent so as to absorb shearing stress produced by the difference between the first and second linear expansion coefficients at a surface adhered to the magnet.

20 2. The adhesion structure according to claim 1, wherein the thickness of the adhesive agent layer determined by the thickness determining means is in the range of 0.05 mm to 0.2 mm.

25 3. The adhesion structure according to claim 2, wherein the thickness of the adhesive agent layer is 0.05 mm to 0.2 mm in 50% to 100% of the adhesive agent layer.

30 4. The adhesion structure according to claim 1, wherein the thickness of the adhesive agent layer determined by the thickness determining means is in the range of 0.075 mm to 0.175 mm.

5. The adhesion structure according to claim 1,  
wherein the thickness of the adhesive agent layer determined  
by the thickness determining means is in the range of 0.1 mm  
to 0.15 mm.

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6. The adhesion structure according to claim 1,  
wherein the thickness determining means is formed on an  
outer surface of the rotor or an inner surface of the stator  
and includes a thickness determining groove filled with the  
10 adhesive agent.

7. The adhesion structure according to claim 6,  
wherein the thickness determining groove extends along the  
entire outer surface of the rotor or the inner surface of  
15 the stator.

8. The adhesion structure according to claim 6,  
wherein the thickness determining groove has a depth in the  
range of 0.05 mm to 0.2 mm.

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9. The adhesion structure according to claim 6,  
wherein the thickness determining groove has a depth in the  
range of 0.075 mm to 0.175 mm.

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10. The adhesion structure according to claim 6,  
wherein the thickness determining groove has a depth in the  
range of 0.1 mm to 0.15 mm.

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11. The adhesion structure according to claim 1,  
wherein the thickness determining means includes:  
an opposing surface defined on a surface of the magnet  
opposed to the rotor or the stator and having a radius of  
curvature that is smaller than the radius of the rotor or

the stator; and

a gap defined between the rotor or the stator and the opposing surface of the magnet.

5        12. The adhesion structure according to claim 1,  
wherein the difference between the first linear expansion  
coefficient and the second linear expansion coefficient is  
greater than  $10.4 \times 10^{-6}$ .

10      13. The adhesion structure according to claim 12,  
wherein the rotor or the stator is made of steel, and the  
magnet is made of a rare earth element material.

15      14. The adhesion structure according to claim 1,  
wherein the thickness determining means is arranged to  
correspond with 48% or more of a surface of the magnet  
opposed to the rotor or the stator in the axial direction of  
the rotor or the stator.

20      15. The adhesion structure according to claim 1,  
wherein 48% to 65% of a surface of the magnet opposed to the  
rotor or the stator is adhered to the rotor or the stator by  
the adhesive agent layer.

25      16. The adhesion structure according to claim 1,  
wherein the thickness determining means includes a thickness  
determining groove formed on a surface of the magnet opposed  
to the rotor or the stator and filled with the adhesive  
agent.

30      17. The adhesion structure according to claim 1,  
wherein the thickness determining means includes a  
projection for determining the thickness of the adhesive

agent layer with the projection formed integrally with one of the magnet and the rotor or stator.

18. The adhesion structure according to claim 1,  
5 wherein the thickness determining means includes a thickness determining member arranged between the magnet and the rotor or stator.

19. The adhesion structure according to claim 1,  
10 wherein the adhesive agent layer has a uniform thickness.

20. A motor comprising:

a rotor having a first linear expansion coefficient;  
a magnet adhered to the rotor by an adhesive agent

15 forming an adhesive agent layer, the magnet having a second linear expansion coefficient that differs from the first linear expansion coefficient; and

20 a thickness determining means extending in an axial direction of the rotor and arranged on either one of the rotor or the magnet, the thickness determining means determining the thickness of the adhesive agent layer formed from the adhesive agent so as to absorb shearing stress produced by the difference between the first and second linear expansion coefficients at a surface adhered to the  
25 magnet.